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equal intervals, resting on a hollow iron railway; and from these points of the chains a number of suspending rods proceed to the platform; at each side below the latter, are an equal number of jointed struts or supports; and the nature of the motion is such, that, when the platform is at the bottom, these struts are nearly horizontal, and the suspending rods vertical, and *vice versa* when the platform is at its greatest elevation; hence, the latter is at all times fully and firmly supported.

The combination is such, that power is to the utmost economized, the ratio of the power to the weight increasing as the hull of the vessel leaves the water, and advantage being taken of her own floatage power as long as possible.

The inventor stated, that a fifty gun frigate, with her standing rigging up, could be taken out of water, and laid dry and ready for workmen, in sixteen minutes from the time she came over the platform, by his arrangement, which is equally applicable where there is no tide, (as at Malta, &c.,) as where the rise and fall are considerable. The objects also held in view, and he conceives attained, by his method, are equal strain, and wear and tear (by principle) on all the parts—and hence freedom from risk of accident—durability and facility of repair in the machine itself.

A paper by the Rev. Dr. Hincks, “On the Egyptian *Stèle*, or Tablet,” was read.

Among the Egyptian monuments in museums, there is none more likely to afford information than the stèles, or funeral tablets, which resemble in form the head-stones in our grave-yards, and which appear to have been set up in similar positions. The object of this paper is to describe the parts of which the inscriptions that these tablets contain usually consist, with such observations as may enable a person, who should meet with one of them, to form a judgment as to its age, and as to the importance of its contents.

It commences with some details respecting two tablets

each of which records the dates of the birth and death of the deceased person, and also the length of his life. A diligent search should be made for similar tablets, which would evidently be of the greatest value in settling the chronology of the Egyptian sovereigns. One of these, which is at Florence, records that a person named Psammetich was born in the third year of Necho, the tenth month and first day ; that he died in the thirty-fifth year of Amasis, the second month and sixth day ; and that he lived seventy-one years, four months, and six days. From this it appears, that the interval between the first year of Necho and the first of Amasis was forty years ; and it follows that the reigns of these kings must have commenced in 611 and 571 before our era. The other tablet, which belongs to Mr. Harris of Alexandria, is that of a priest named Psherinphthah, who died, aged forty-nine years, in the eleventh year of Cleopatra, the eleventh month and twentieth day. The chronology of this period being well known from other sources, the dates of the tablet would be of no value, did not that of the birth contain a royal cartouche, which does not occur elsewhere, and an unknown numeral character. The cartouche is shown to be that of Ptolemy Alexander, though it does not contain his usual surname ; and the unknown character, a bird's head, is proved to stand for *twenty*. The tablet of Te-imothph, the wife of this priest, who was also his half-sister, is in the British Museum ; and several circumstances in their family history, taken from the two tablets, are collected together. The birth of their son Imothph, in the sixth year of Cleopatra, and when the father was turned of forty-three, is recorded on both of them.

The most usual form of the inscription on a stèle is translated as follows:—"An act of homage to A ; he has (or as the case may be) given B unto C ; who says D." The blank at A is filled up with the names and titles of deities ; that at B with an enumeration of gifts ; that at C with the name and description of the deceased person ; and at D is the speech

attributed to him, in which he sometimes records the leading events of his life. Sometimes the tablet is without a speech, the inscription closing at the end of C ; and sometimes it begins with C, containing only the name and description of the deceased person and his speech. In a few tablets the prefatory matter is somewhat different from the above ; but the form given above is much the most usual.

No record of facts is to be expected in a tablet till we come to C ; the preceding part of the inscription is only valuable, as it may aid us in the study of the language, and as it may lead us to know the age of the tablet, supposing it to be without a regular date. For this last purpose, a number of criteria of antiquity are proposed, the result of a careful examination of a great many tablets of known ages. The most remarkable of these is, that in the most ancient tablets the sculptured figures are exclusively those of the deceased person and his relatives ; never these of deities, as in the tablets of the eighteenth dynasty and subsequent ages.

At the close of the paper some remarks are made on the chronology of the early Egyptian kings, who are mentioned in the course of it. It is demonstrated that the predecessor of Amenemhe II., the first king in the series of Abydos, was Osortasen I. ; the latter being the successor of Amenemhe I., and not his predecessor, as he has been stated to be by Major Felix and others, on the supposed authority of an inscription at Beni-Hassan. This completely overturns the hypothesis of Mr. Cullimore, respecting the connexion of a pretended royal series at Karnac with the series of Abydos.

The phonetic hieroglyphics are represented in this paper by Hebrew characters, in preference to Roman. This has been done on account of the author's peculiar views respecting *the extended arm*, *the crux ansata*, and some other characters, which he considers to be equivalent to the Hebrew Ayin, and by no means "vague vowels," as Champollion supposed. He regards these characters as essentially dis-

tinct from *the feather, the eagle*, and others, with which they have been hitherto confounded, and which he represents by the Hebrew Aleph.

The Rev. Charles Graves, F.T.C.D., read a paper "On the Application of Analysis to spherical Geometry."

The object of this paper is to investigate and apply to the geometry of the sphere, a method strictly analogous to that of rectilinear coordinates employed in plane geometry.

Through a point O on the surface of the sphere, which is called *the origin*, let two fixed quadrantal arcs of great circles OX , OY , be drawn; then if arcs be drawn from Y and X through any point P on the sphere, and respectively meeting OX and OY in M and N , the trigonometric tangents of the arcs OM , ON , are to be considered as the *coordinates* of the point P , and denoted by x and y . The fixed arcs may be called *arcs of reference*. An equation of the first degree between x and y represents a great circle; an equation of the second degree, a spherical conic; and, in general, an equation of the n^{th} degree, between the spherical coordinates x and y , represents a curve formed by the intersection of the sphere with a cone of the n^{th} degree, having its vertex at the centre of the sphere.

Though it is not easy to establish the general formulæ for the transformation of spherical coordinates, they are found to be simple.

Let x and y be the coordinates of a point referred to two given arcs, and let x' , y' , be the coordinates of the same point referred to two new arcs, whose equations as referred to the given arcs are

$$y - y'' = m(x - x''),$$

$$y - y'' = m'(x - x''),$$

x'' , y'' , being the coordinates of the new origin; then the values of x and y to be used in the transformation of coordinates would be